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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,071	08/20/2001	Christopher B. Weare	MSFT-0579/167505.2	7351

		EXAMINER
7590	06/15/2004	LE, DEBBIE M

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ART UNIT	PAPER NUMBER
2177	5

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/934,071	WEARE, CHRISTOPHER B.
	Examiner	Art Unit
	DEBBIE M LE	2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 April 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 18-40* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,18-35 and 38-40* is/are rejected.

7)☒ Claim(s) *36-37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicants amendment filed on 4/8/04. Claim 15 is amended. Claims 16-17 are

canceled. Claims 1-15, 18-40 are presented for examinations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-35, 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Blatter et al (US Patent Application 2003/0014407 A1) in view of Blum et al (US

Patent 5,918,223).

As per claim 1, Blatter discloses a system for making media recommendations

to users comprising:

assigning to each media entity of a plurality of media entities (media object, ¶

0024, line 1) in a data set to at least one class (category, ¶ 0022, line 11-14), each class

of said at least one class corresponding to a subset of perceptual properties pre-defined

for the data set (media properties, ¶ 0024, line 2-5); processing each media entity of

said data set to extract at least one digital signal processing (¶ 0004, line 12)

characteristic for each media entity (¶ 0022, lines 8-10); each vector includes said at

least one class and said at least one digital signal processing characteristic (¶ 0062);

forming a classification chain (¶ 0021, lines 9-11)

Blatter does not explicitly teach generating a plurality of feature vectors for said

plurality of media entities. However, Blum teaches generating a plurality of feature

vectors for said plurality of media entities (col. 3, lines 14-29). Thus, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to combine

the teachings of the cited references to provide the step of generating a plurality of

feature vectors for a plurality of media entities in order to allow the database system to

measure the distance (compare) between the vectors that suitable to the searching of a

large media object database.

As per claims 2 and 19, a method according to claim 1, Blum teaches further

comprising calculating a neighborhood distance within the vector space of said

classification chain for each of said at least one perceptual class (3, lines 30-34).

As per claim 3 and 20, a method according to claim 2, Blum teaches wherein

said neighborhood distance defines a distance within which two vectors in the

classification chain space are in the same neighborhood (col. 3, lines 35-40).

As per claim 4 and 21, a method according to claim 2, Blum teaches wherein

said calculating of a neighborhood distance for each of said at least one perceptual

class includes determining a distance within which two vectors of the classification chain

possess the same class given a threshold degree of error (col. 13, lines 55-59).

As per claim 5 and 22, a method according to claim 4, Blum teaches wherein a

human determines said threshold degree of error that will be tolerated, said threshold

degree of error placing a maximum limit on the distance that may be used for determining neighborhoods (col. 14, lines 50-54).

As per claim 6 and 23, a method according to claim 1, Blatter teaches further comprising: processing an unclassified media entity (¶ 0063, lines 2-3) to extract at least one digital signal processing characteristic for the unclassified media entity (¶ 0004, line 12); generating a vector for the unclassified media entity (¶ 0062, lines 1-2) including said at least one digital signal processing characteristic (¶ 0004, line 12); presenting the vector for the unclassified media entity to the classification chain (¶ 0063, lines 2-6); and classifying the unclassified entry with an estimate of at least one perceptual class of the classification chain located in the neighborhood of the vector for the unclassified entity (¶ 0063, lines 7-15).

Blatter does not explicitly teach calculating the representative at least one perceptual class of the subset of the plurality of vectors. However, Blum teaches calculating the representative at least one perceptual class of the subset of the plurality of vectors (col. 17, lines 29-32).

As per claims 7-8, a method according to claim 6, Blum teaches wherein said classifying of the unclassified entry includes locating the subset of the plurality of vectors of the classification chain located in the neighborhood, and wherein said locating includes calculating, as the set of vectors of the plurality of vectors of the classification chain within the neighborhood distance, the set of vectors of the plurality of vectors of the classification chain within a maximum Euclidian distance for classifying new unclassified entities within a threshold tolerance (col. 17, lines 45-67).

As per claim 9, a method according to claim 8, Blum teaches wherein a human determines said maximum Euclidian distance for purposes of determining the neighborhood vectors within the threshold tolerance (col. 22, lines 12-20).

As per claim 10 and 25, a method according to claim 6, Blum teaches wherein said classifying of the unclassified entry includes classifying the unclassified entry with a median class represented by the neighborhood (col. 14, lines 15-21).

As per claim 11, a method according to claim 6, Blum teaches wherein said class is described by a numerical value and said classifying of the unclassified entry includes classifying the unclassified entry with a mean of numerical values found in the neighborhood (col. 20, lines 55-65).

As per claim 12, 26 and 34, a method according to claim 6, Blum teaches wherein said classifying includes returning at least one number indicating the level of confidence of the class assignment (col. 12, lines 13-21, col. 14, lines 24-36).

As per claim 13 and 27, a method according to claim 12, Blum teaches wherein said classifying includes returning a ratio defined by the number of entries in the neighborhood having the representative class over the number of entries in the neighborhood not having the representative class (col. 10, lines 41-56).

As per claim 14 and 28, a method according to claim 12, Blum teaches wherein said class is described by a numerical value and said classifying includes returning a standard deviation of the numerical values in the neighborhood (col. 14, lines 56-67).

Claim 15 is rejected by the same rationale as state in independent claim 1 argument.

Claims 18, 30 and 31 are rejected by the same rationale as state in independent

claim 1 argument. Furhtermore, Blatter teaches classified by humans and digital signal

processing data as classified by at least one computing device (¶ 0021, lines 13-16);

and processing means for comparing an unclassified media entity to the classification

chain data structure to determine at least one perceptual class of said unclassified

media entity (¶ 0063).

As per claims 29 and 33, a computing system according to claim 18, Blatter

further comprising: an input device for receiving a new unclassified media entity (¶ 0063

input object); and an output device for outputting at least one perceptual class of said

new unclassified media entity based upon said classification chain based upon

processing of said processing means (¶ 0063).

As per claim 32, a method according to claim 31, Blatter teaches wherein said

method is repeated until a sufficientnumber of vectors have been added to said

classification chain data structure, such that said classification chain data structure

successfully classifies unclassified media entities within a threshold degree of success

(¶ 0051).

As per claim 33, a method according to claim 32, Blatter teaches: inputting a

vector representative of a new unclassified media entity; comparing said vector to the

vector space of the classification chain data structure; and outputting an estimate of the

perceptual class of the new unclassified media entity based upon vectors found in a

neighborhood of the classification chain data structure, wherein a neighborhood of

vectors is defined as a set of vectors located within a neighborhood distance (¶ 0063).

As per claim 34, a method according to claim 33, Blum further comprising: outputting an estimate of the confidence level with which said estimate of the perceptual class is correct (col. 12, lines 13-21, col. 14, lines 24-36).

As per claim 35, a method according to claim 34, Blatter teaches a human examines the new unclassified media entity (¶ 0021, entered manually by experts in the particular area of media). And Blum teaches wherein if said estimate of the confidence level is low (low-confidence) and said human determines an action (removal) for said classification chain data structure based thereon (col. 13, lines 49-52).

As per claim 38, a method according to claim 35, Blatter teaches wherein the new unclassified media entity is rejected from the classification chain as an outlier (¶ 0063, 8-10).

As per claim 39, a method according to claim 35, Blatter teach the performance level of the classification chain improves over time due to the examination of unclassified media entities that have a low confidence level associated therewith (¶ 0026).

As per claim 40, a method according to claim 33, Blatter teaches wherein it is determined whether said vector representing said new unclassified media entity has been previously processed, thereby obviating the need to re-process said vector via the classification chain (¶ 0063).

Allowable Subject Matter

Claim 36 is allowable because the prior art record fails to teach or fairly suggest that a human adds a new subset of perceptual properties to the classification chain data structure defined by the new unclassified data structure.

Claim 37 is allowable because the prior art record fails to teach or fairly suggest that a human modifies an existing subset of perceptual properties represented by the classification chain data structure in accordance with the results of the human examinations.

Claims 36-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed on 4/8/04 have been fully considered but they are not persuasive.

Applicant argued that neither Blatter or Blum alone or combination does not teach correlate classes of perceptual properties with DSP characteristics.

In response, the examiner respectfully disagrees. The examiner submits that Blatter does teach correlate classes of perceptual properties with DSP characteristics at paragraph 0004 that "DSP, however, is very ineffective in finding songs which "sound similar" to a given song because it can only match simple music characteristics, such as tempo, rhythm, and instrumentation. **Human perception of musical similarity is a far**

more complex combination of many inputs, some of which are still unknown".

Therefore, Blatter's invention at paragraph 0021, lines 12-14 that "Data for this

database may be obtained from published sources and/or **entered manually by**

experts in the particular area of media" which is equivalent to the present claim

invention "correlate classes of perceptual properties with DSP characteristics", as

argued by the applicant in page 14 the definition term "perception" and the present

specification at page 20, lines 13-17 defined that "human experts classify a presentative

set of sounds according to their perceptual qualities" which is equivalent to Blatter's

invention that experts can classify the media (songs) in the particular area of media.

Applicant argued that neither Blatter or Blum alone or combination does not

teach generating a plurality of feature vectors for said plurality of media entities, wherein

each vector includes said at least one class and said at least one digital signal

processing characteristic.

In response, the examiner respectfully disagrees. The examiner again submits

that Blatter does teach a vector is created for properties types to match, based on the

media type and if all of the properties (listed on the vector) match, then current media

object is selected as one which sounds like (see paragraphs 0061-0063). Blatter does

not explicitly teach generating a plurality of feature vectors for said plurality of media

entities. However, Blum teaches generating a plurality of feature vectors for said

plurality of media entities (col. 3, lines 14-29). Thus, it would have been obvious to one

of ordinary skill in the art at the time the invention was made to combine the teachings

of the cited references to provide the step of generating a plurality of feature vectors for

a plurality of media entities in order to allow the database system to measure the distance (compare) between the vectors that suitable to the searching of a large media object database.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M LE whose telephone number is 703-308-6409. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

DEBBIE M LE
Examiner
Art Unit 2177

Debbie Le

June 10, 2004.

GRETA ROBINSON
PRIMARY EXAMINER